

## IN THE CLAIMS

Please amend the claims as follows:

1. (Cancelled).

2. (Currently amended)      ~~The receiver according to claim 1A~~  
receiver for receiving modulated coded signals, said receiver  
comprising:  
          a phase-shift-keying demodulator for demodulating said  
signals; and  
          a differential detector having a decoder for decoding said  
signals,  
wherein said differential detector further comprises a non-linear  
compensator coupled to an output of said decoder output for  
compensating a decoder output signal,  
wherein said non-linear compensator comprises a channel estimator  
for estimating at least one coefficient of at least one term of  
said decoder output signal and a remover for removing said at least  
one term ~~of~~ from said decoder output signal.

3. (Currently amended)      The receiver according to claim 2,  
wherein said receiver is designed for a Bluetooth environment.

4. (Currently amended)      The receiver according to claim 3,  
wherein said decoder output signal is defined as  $u_k = Ab_k + Bb_{k-1} +$

$Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$ , with ~~and~~ said remover ~~removing~~ removes the H-term from the decoded output signal.

5. (Currently amended) The receiver according to claim 4, wherein said remover comprises a combiner for receiving an H-coefficient from said channel estimator for combining said decoder output signal with said ~~H-term~~ coefficient such that ~~said the H-term~~ in the decoder output signal is removed.

6. (Currently amended) The receiver according to claim 3, wherein said decoder output signal is defined as  $u_k = Ab_k + Bb_{k-1} + Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$ , with ~~and~~ said remover ~~removing~~ removes the  $Bb_{k-1}$ -term from the decoder output signal.

7. (Currently amended) The receiver according to claim 6, wherein said remover comprises a combiner for receiving a product of a B-coefficient originating from said channel estimator and a  $b_{k-1}$ -signal originating from an output of said non-linear compensator and delayed by  $T_s$  for combining said decoder output signal with said  ~~$Bb_{k-1}$  term~~ product such that said  $Bb_{k-1}$ -term is removed from the decoder output signal.

8. (Previously Presented) The receiver according to claim 7, wherein said remover comprises a slicer located between said

combiner and said output of said non-linear compensator for slicing the compensated decoder output signal.

9. (Currently Amended) ~~Non-linear~~A non-linear compensator for use in a receiver for receiving modulated coded signals and comprising a phase-shift-keying demodulator for demodulating said signals, ~~and comprising a differential detector having a decoder~~ for decoding said signals, wherein said differential detector comprises said non-linear compensator coupled to ~~receive an output of said decoder output~~ for compensating a decoder output signal, wherein said non-linear compensator comprises a channel estimator for estimating at least one coefficient of at least one term of said decoder output signal and a remover for removing said at least one term from said decoder output signal.

10. (Currently amended) ~~Transceiver~~A transceiver comprising a transmitter with a differential coder and a phase-shift-keying modulator for transmitting modulated coded signals, ~~and comprising a receiver for receiving said modulated coded signals with, said receiver comprising~~ a phase-shift-keying demodulator for demodulating said signals, ~~and a differential detector having a decoder~~ for decoding said signals, wherein said differential detector comprises a non-linear compensator coupled to ~~receive an output of said decoder output~~ for compensating a decoder output signal,

wherein said non-linear compensator comprises a channel estimator for estimating at least one coefficient of at least one term of said decoder output signal and a remover for removing said at least one term from said decoder output signal.

11. (Currently amended) ~~Method~~ A method for receiving modulated coded signals ~~and comprising the steps of:~~

receiving modulated coded signals;  
demodulating said signals via phase-shift-keying demodulation; and of  
decoding said signals, wherein said step of decoding comprises a substep of; ~~and~~  
non-linearly compensating the decoded signals,

wherein said non-linearly compensating step includes the sub-steps of:

estimating at least one coefficient of at least one term of the decoded signal; and  
removing at least one term from the decoded signal corresponding to the estimated at least one coefficient.

12. (Currently amended) ~~Computer~~ A computer program stored on a computer readable medium that when executed by a processor configures the processor for receiving modulated coded signals, demodulating said signals via phase-shift-keying demodulation, ~~and decoding said signals, wherein said decoding comprises a subfunction of~~ and non-linearly compensating decoded signals,

wherein said non-linearly compensating function includes the sub-  
functions:

estimating at least one coefficient of at least one term  
of the decoded signal; and

removing at least one term from the decoded signal  
corresponding to the estimated at least one coefficient.

13. (Previously Presented) Receiver for receiving modulated coded signals and comprising a phase-shift-keying demodulator for demodulating said signals and comprising a differential detector for decoding said signals, wherein said differential detector comprises a non-linear compensator coupled to a decoder for compensating a decoder output signal, wherein said decoder output signal is defined as  $u_k = Ab_k + Bb_{k-1} + Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$ , with said remover removing the H-term.

14. (Previously Presented) Receiver for receiving modulated coded signals and comprising a phase-shift-keying demodulator for demodulating said signals and comprising a differential detector for decoding said signals, wherein said differential detector comprises a non-linear compensator coupled to a decoder for compensating a decoder output signal, wherein said decoder output signal is defined as  $u_k = Ab_k + Bb_{k-1} + Cb_{k+1} + Db_k^* + Eb_{k-1}b_k + Fb_kb_{k+1} + Gb_{k-1}b_kb_{k+1} + H$ , with said remover removing the  $Bb_{k-1}$ -term.

